



PATENT  
Atty. Dkt. AMAT/7729/TCG/EPI/LE

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: §  
Singh, et al. §  
Serial No.: 10/688, 797 § Group Art Unit: 160  
Confirmation No.: 2637 §  
Filed: October 17, 2003 § Examiner: Unknown  
For: Silicon-Containing Layer §  
Deposition with Silicon §  
Compounds §

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

### CERTIFICATE OF MAILING 37 CFR 1.8

I hereby certify that this correspondence is being deposited on February 10, 2004 with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450.

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The Applicants, and the Attorney who signs below on the basis of the information supplied by the inventor and the information in his file, submit herewith patents, publications, or other information of which they are aware, which may be material to the examination of this application and in respect of which there may be a duty to disclose in accordance with 37 CFR § 1.56.

While the information submitted in this Information Disclosure Statement may be material pursuant to 37 CFR § 1.56, it is not intended to constitute an admission that any patent, publication, or other information referred to therein is prior art for this invention unless specifically designated as such.

In accordance with 37 CFR § 1.97, this Information Disclosure Statement is not to be construed as a representation that a search has been made or that no other possibly material information as defined under 37 CFR § 1.56(a) exists.

The patents and/or publications submitted herewith are set forth on the attached Form PTO-1449.

If the sum of \$180.00 is due under 37 CFR § 1.17(p) pursuant to § 1.97, the Commissioner is hereby authorized to charge this fee, and any other fee necessary

to make this submission timely, to the Deposit Account No. 20-0782/AMAT/7729/KMT.

Respectfully submitted,



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**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

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Sheet

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of 9

Application Number

10/688,797

Filing Date

October 17, 2003

First Named Inventor

Singh, et al.

Group Art Unit

160

Examiner Name

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**U.S. PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code <sup>2</sup> (if known)			
A1		US-6632279B1	10/14/2003	Ritala, et al.	
A2		US-6630413B2	10/07/2003	Todd	
A3		US-6559520B2	05/06/2003	Matsuki, et al.	
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A1	US-6305314B1		10/23/2001	Sneh, et al.	
A2	US-6287965B1		09/11/2001	Kang, et al.	
A3	US-6284686B1		09/04/2001	Marlor	
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A7	US-6207487B1		03/27/2001	Kim, et al.	
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B1	WO 02/065508 A2		08/22/2002	WIPO		
B2	WO 02/064853 A2		08/22/2002	WIPO		
B3	WO 01/66832 A2		09/13/2001	WIPO		
B4	WO 01/41544 A2		06/14/2001	WIPO		
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Substitute for form 1449A/PTC <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <i>(Use as many sheets as necessary)</i>		Application Number	10/688,797		
		Filing Date	October 17, 2003		
		First Named Inventor	Singh, et al.		
		Group Art Unit	160		
		Examiner Name	Unknown		
		Attorney Docket Number	AMAT/7729/TCG/EPI/LE		
Sheet	3	of	9	Submission Date	February 10, 2004

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A1		US-20030089308A1	05/15/2003	Raaijmakers	
A2		US-20030082300A1	05/01/2003	Todd, et al.	
A3		US-20030072975A1	04/17/2003	Shero, et al.	
A4		US-20030060057A1	03/27/2003	Raaijmakers, et al.	
A5		US-20030049942A1	03/13/2003	Haukka, et al.	
A6		US-20030036268A1	02/20/2003	Brabant, et al.	
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B1		WO 98/20524 A1	05/14/1998	WIPO		
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B2	-	JP07300649 A	11/14/1995	JAPANESE		
B3	-	JP6-196809	07/15/1994	JAPANESE		
B4	.	JP5-251339	09/26/1993	JAPANESE		
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Group Art Unit

160

Examiner Name

Unknown

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U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code <sup>2</sup> ( <sup>if known</sup> )			
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B1	JP5047665		02/26/1993	JAPANESE		
B2	JP3286522		12/17/1991	JAPANESE		
B3	JP2172895		07/04/1990	JAPANESE		
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**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

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Sheet

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of

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10/688,797

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B1	EP 1 150 345 A2		10/31/2001	EUROPEAN		
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**NON PATENT LITERATURE DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T <sup>2</sup>
	C1	Argarwal, et al. "Challenges in Integrating the High-K Gate Dielectric Film to the Conventional CMOS Process Flow," Mat. Sec. Soc. Sump. Proc. Vol. 670 (2001)	
	C2	Bedair, "Atomic Layer Epitaxy Deposition Processes," J. Vac. Sci. Technol. B., Vol. 12, No. 1, Jan/Feb 1994	
	C3	Choi, et al. "The Effect of Annealing on Resistivity of Low Pressure Chemical Vapor Deposited Titanium Diboride," J. Appl. Phys. 69(11), 1 June 1991	
	C4	Choi, et al. "Stability of TiB <sub>2</sub> as a Diffusion Barrier on Silicon," J. Electrochem. Soc., Vol. 138, No. 10, October 1991	
	C5	Derbyshire, "Applications of Integrated Processing," Solid State Technology, December 1994	
	C6	Elers, et al. "NbCl <sub>5</sub> as a Precursor in Atomic Layer Epitaxy," Applied Surface Science 82/83 (1994) 468-474	
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	C8	Hwang, et al. "Nanometer-Size α-PbO <sub>2</sub> -type TiO <sub>2</sub> in Garnet: A Thermobarometer for Ultrahigh-Pressure Metamorphism," Science Vo. 288 (14 Apr 2000)	
	C9	Jeong, et al. "Plasma-assisted Atomic Layer Growth of High-Quality Aluminum Oxide Thin Films," Jpn. J. Appl. Phys. 1, Regul. Pap. Short Notes, Vol. 40, No. 1, Jan 2001	
	C10	Jeong, et al. "Growth and Characterization of Aluminum Oxide Al <sub>2</sub> O <sub>3</sub> Thin Films by Plasma-assisted Atomic Layer Controlled Deposition," J. Korean Inst. Met. Mater., Vol. 38, No. 10, Oct. 2000	
	C11	Imai, et al. Jpn. J. Appl. Phys., 30 (1991) 3646.	

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	C12	Lee, et al. "Cyclic Technique for the Enhancement of Highly Oriented Diamond Film Growth," Thin Solid Films 303 (1997) 264-269	
	C13	Lubben, et al. "Mechanisms and kinetics of Si atomic-layer epitaxy on Si(001)2X1 from Si <sub>2</sub> H <sub>6</sub> ," J. Vac. Sci. Technol. A 9 (6), Nov/Dec 1991, 3003-3011.	
	C14	Min, et al. "Metal-organic Atomic-layer Deposition of Titanium-silicon-nitride Films," Applied Physics Letters, Vol. 75, No. 11 (11 Sep 1999)	
	C15	Min, et al. "Chemical Vapor Deposition of Ti-Si-N Films with Alternating Source Supply," Mat. Res. Soc. Symp. Proc. Vol. 564 (1999)	
	C16	Paranjpe, et al. "Atomic Layer Deposition of AlO <sub>x</sub> for Thin Film Head Gap Applications," J. Electrochem. Soc., Vol. 148, No. 9, Sep. 2001	
	C17	Ritala, et al. "Atomic Layer Deposition of Oxide Thin Films with Metal Alkoxides as Oxygen Sources," Science Vol. 288 14 Apr 2000	
	C18	Suda, et al. "Adsorption and thermal dissociation of disilane (Si <sub>2</sub> H <sub>6</sub> ) on Si(100)2X1," J. Vac. Sci. Technol. A8 (1), Jan/Feb 1990, 61-67.	

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